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Conference Abstract

Towards a Federated List of Versioned Georeferenced Site Names: A local experience

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Abstract

The *Museu de Ciències Naturals de Barcelona* (MCNB) holds a collection of ca. 130,000 digitally registered zoological specimens collected around the world and dating from 1852 to the present. Specimens are shared between non-arthropod invertebrates (32% of the collection), arthropod invertebrates (39%) and vertebrates (29%). The museum recognizes georeferencing as a crucial process for mobilising its collections into digitally accessible information and has provisioned resources in an ongoing georeferencing process for more than 10 years. The aim of this poster is to show how a bottom-up model benefits the georeferencing work.

Site names as written by collectors in specimen tags need to be converted into spatial coordinates with precision and uncertainty information. In order to guide this process, the research community has provided a set of georeferencing protocols and recommendations which start with the physical tagged specimen and end with a digital record in a public biodiversity database. In addition, having direct knowledge of the territory where the tagged locality lies and access to the most precise local cartography helps to ensure that a high quality georeferenced digital record can be created. Many localities described in specimen tags carry place names which cannot be found or correctly derived from small scale maps or digital map resources such as Google Maps. Often, it is necessary to have

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access to more locally detailed cartography and, sometimes, historical cartography. Therefore, we recommend that this is added to existing protocols, and that institutions from different geographical areas to pull together their efforts in order to create a federated list of georeferenced site names. This would be a more efficient strategy of generating better quality gazetteers, streamlining efforts and making more efficient use of the collective resources since many tagged site names are the same for different specimens across multiple collections.

The georeferencing process is ultimately dependent on the cartography available to the georeferencer at the moment of converting the tagged collection event into a digital record. A georeference record may be subject to future improvements in future georeferencing revisions. Newly available cartography or methods of reporting location and uncertainty may lead to a revision of any given georeferenced record. Thus, any federated databasing effort to list georeferenced site names should include versioning capabilities.

In order to address the need to incorporate expert knowledge into georeferecing efforts, alongside versioning site names, the MCNB has developed a software platform tool. This platform, called Georef, is implemented as a web application with storage, querying, editing and visualizing capabilities for both site names and the cartographic resources used in the georeferencing process. Georef is now also used by other institutions from the Western Mediterranean basin with which MCNB shares data and local knowledge. A public API has been developed for accessing the georeferenced sites and to support a crowd-sourced tool which allows the public to comment and propose edits to location data. Ultimately, this tool improves the quality of the georeferencing and research using these data.

Keywords

georeferencing, natural history collections, federated site names lists, versioned georeferenced site names lists, Museu de Ciències Naturals de Barcelona

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